

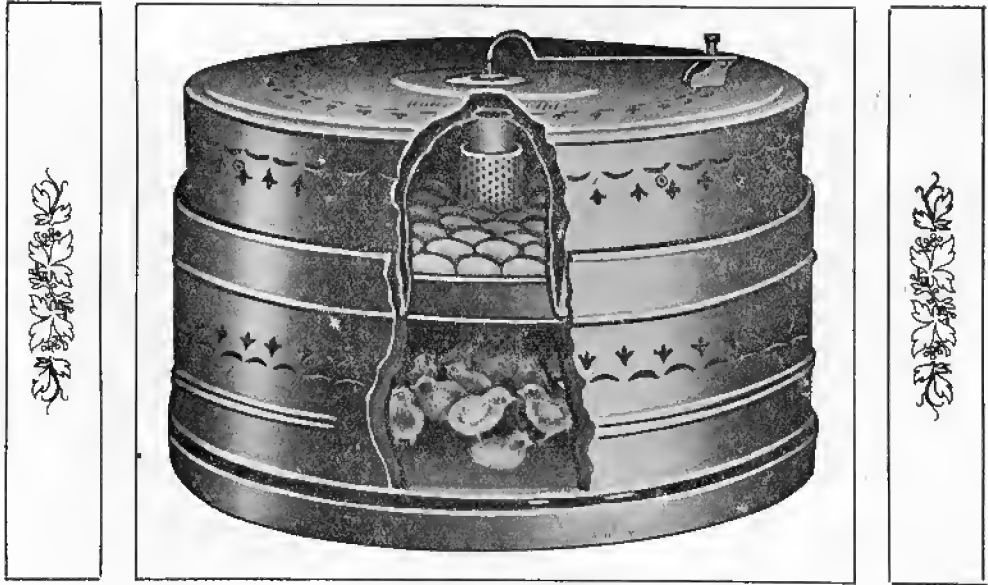
FULTRY REVIEW

JUNE 1908.



BUCKEYE ENG. CO. CINCINNATI

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The Brooder Hatcher.

Our Brooder-Hatcher is designed to do double duty and meet the requirements of all classes of poultry raisers, the ones raising but a few chickens annually, as well as the large breeder raising thousands. They have some advantages over our regular Hatchers for hatching, as they will stand a greater variation of temperature in the room in which they are operated, as the nest is protected by the brooder.

This machine is the result of many year's work and experiments to bring about the desired conditions, making one lamp do double duty and at the same time to have a machine constructed in a way to do successfully the work artificially and at the same time to carry out the natural laws of incubation and brooding.

Two Machines Complete in One, Price \$7.50

CAMBRIDGE, N. Y., Nov. 12, 1906.

CYCLE HATCHER COMPANY,

GENTLEMEN:—The combined brooder-hatcher I purchased of you last spring is certainly all you claim it to be. The first time we operated it we put in 49 eggs. After the 6th day we tested out 7 and replaced them with 9 fresh eggs. The first lot hatched out 40 chicks and the 9 eggs, put in after the machine had been running a week, hatched 7 chickens. The next time we put in 50 eggs and tested out 6 and one that was cracked and hatched 40 chickens from the 43 eggs. Chicks were brooded in the machine at the same time the eggs were incubating, doing double duty with the one lamp. We think the "Cycle" is the best machine on the market.

Very truly yours, H. V. BUMP.

Cycle Hatcher Co., 418 William St., Elmira, N. Y.

The Poultry Review.

Entered as second class matter at the post office at Elmira, N. Y.

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No. 9.

What Constitutes Good Stock?

There is a great deal of misunderstanding about what constitutes fancy or standard and pure-bred fowls. Some expect when they buy a bird for one, two or three dollars, that it will be simply perfect and have all the show points they have ever heard of, and if the buyer possesses a Standard he will expect the bird to be perfect in every section. Such people are usually disappointed. On the other hand, the beginner is very apt to get an inflated idea of his stock. He probably knows nothing about standard poultry or the breed he expects to take up. He may have read the poultry papers, a little and knows who the leading breeders of his chosen breed are. He decides to start right, so orders eggs from a reliable breeder of reputation. Perhaps the breeder sells eggs from two kinds of stock, as many do, one being exhibition matings for which he asks \$3.00 or \$5.00 per setting, and the other what he terms utility stock, being from birds lacking in standard qualities, but not especially bred for utility. From these last birds he sells eggs for \$5.00 or \$6.00 per hundred. The beginner writes and is assured by the breeder that these utility birds are of just as pure blood as the others, lacking only in fancy points, so he invests in the cheaper eggs and, if successful, raises a nice bunch of chicks.

While his first idea was, perhaps, to produce market eggs, he soon comes to the conclusion that his birds and eggs are worth more than mongrels, so he sells eggs for hatching to his neighbors and, perhaps, advertises in the poultry papers, announcing that he has So-and-So's strain direct. He does no culling, but mates all the birds he raised. His stock is of the best, for is it not direct from one of the foremost breeders? He does not buy a Standard and go over these birds section by section to see how many are up to Standard requirements and which are disqualified specimens. Other beginners seeing these eggs advertised at a reduced price, buy them believing them to be just as good as though they sent to the original breeder and paid more for them.

I visited a poultry plant not long ago where some 500 White Leghorn hens are kept. The owners purchased eggs for their foundation stock from Blanchard and Wyckoff, buying largely the cheaper grade of eggs. These men believed that they really have as good stock as there is in the country and advertise their eggs at a price a little below that charged by the breeders from whom they secured their start, using their names liberally. If they had culled closely and only bred from the best, they might have had stock to be proud

of. The hens were all kept in one long house, and while the house is divided into ten pens, the doors between the pens were left open and the hens all occupied the same yard. There was some fifty cocks and cockerels running with these hens. Some of the old males which had been kept over were disqualified. A young man was there trying to buy some males, and wished me to pick them out. The proprietor caught a jaunty looking bird and passed it to me with the remark that Blanchard would get \$10.00 or \$20.00 for a bird like that. A single glance showed that he was disqualified, having white in the face, and such a bird should never have been allowed to pass the broiler stage.

Men who breed standard poultry should know what constitutes a good bird and should not be afraid to cull, and cull closely. No one has a right to sell a disqualified male as a breeder, representing it to be a standard or pure-bred bird. If such birds are sold, other than for market, they should be sold as disqualified birds. The fact that the parent stock came from a noted breeder carries no significance. Culls will come from the best breeder's best stock, and they are no better than other culls. When you buy the best the chances are that you will get a few good specimens; with cheap eggs from stock promiscuously bred the percentage of culls will be larger.

A pure-bred chicken is no more valuable than a mongrel, if it does not have something to recommend it more than purity of blood. If the bird is standard bred, it is valuable as a breeder of standard poultry, and the nearer it approaches standard perfection the more valuable it is, if it has good breeding back of it. If it comes from a utility bred flock, it may be a great layer or have the power of transmitting the laying trait, and consequently is valuable if it does not meet standard require-

ments. Culls from exhibition stock are not utility stock, as many breeders would have us think.

Utility and standard poultry must be bred along separate lines if the greatest perfection is to be secured. One cannot aim at a crow and kill a bear. Of course there are great layers among the standard-bred exhibition fowls, and there are sometimes high-scoing birds in utility flocks, but these merely came by chance and are not likely to reproduce these qualities. Each have their value as breeders. It would be folly for the man aiming to produce commercial eggs to buy stock or hatching eggs from high-cost exhibition matings, when by going to some utility breeder he can secure a hundred eggs from stock that will answer his purpose better, for the price of one or two settings. Likewise the person desiring to raise show specimens and sell standard-bred eggs and poultry would be foolish to invest in utility stock or eggs from cheap, poorly-bred birds. He should have the best he can procure, and breed intelligently. He should have a Standard and know his breed.

In the spring, when market eggs are cheap and hatching eggs in demand, nearly every person keeping poultry seems to be imbued with the idea of securing a fancy price for eggs. A city man who moved on to a farm in my neighborhood, purchased an incubator and went to a neighbor's for a supply of eggs to fill it. When he had told his errand, the neighbor's wife grasped the situation and said, "We ask more for hatching eggs." The price was willingly paid, but the man wondered why these eggs were more valuable than those the lady took to the store. They were not especially sorted or cared for in any special way, and the stock from which they came was nothing but mongrels.

While it is just and proper that stock eggs should be worth more than com-

mercial eggs, their value is in the care they receive, the fact that they are from pure stock possessing some particular merit and are fertilized by a vigorous male that will insure to them strong germs that will, with reasonable care, produce vigorous chicks. When a man lets his hens all run together, has no special matings, and his birds do not possess some point of superiority over mongrels, even though they be of pure blood, and he sells the bulk of his eggs for commercial use, it is despicable of him to charge a neighbor more than market price, simply because he wants them for hatching.

When we go upon the large commercial egg farms we see there is a desire to breed the birds close to the Standard, and some make special matings of their best birds, from which they sell stock and eggs at a higher price than those asked for general matings. There is nothing said of the production of these hens; they are simply better from a fancy point of view. This has not resulted in general advantage. Birds from these special matings do not win in competition with birds from a breeder who makes exhibition birds his study, and the general production of the flocks is reduced. At a co-operative test entered into by a number of prominent egg farms, under the direction of Cornell Experiment Station, where the flocks represented some 120 hens, the average egg-yield was less than 120 eggs per hen in a year. This shows what has been done to the utility birds by trying to combine fancy and utility. On another farm, where the same breed is kept and the birds mated strictly in accordance with their performance, of course, rejecting weakly and disqualified specimens, the average yield has been above 175 eggs per hen.

My advice to the beginner is, if he wishes to raise fancy poultry, to purchase stock or eggs from a breeder who wins at the large shows, and one who

wins "first." Don't be afraid of the price. Better pay \$50 for a pair or \$10 for a sitting of eggs than to buy dollar eggs from someone who has the same man's strain. If he wishes market eggs or poultry, purchase of a breeder who makes a specialty of utility stock, not one who combines fancy and utility. And another thing, don't believe that this or that breed are better layers than any other breed. There is nothing in the shape or plumage of the different breeds as described in the Standard of Perfection that makes one breed as better layers than another. If you get a laying strain of any of the practical breeds, you will get eggs; if you get a poor strain, you will have poor layers, no matter what breed you choose. Select your breed with reference to your requirements, remembering that large fowls require more feed and produce their eggs at a greater cost, but they make a greater gain in weight for the food consumed when kept beyond the limitations of the smaller breeds. It will require about the same amount of feed to bring a Leghorn or Plymouth Rock cockerel up to 10 pounds, but beyond this the Plymouth Rock will make the greatest gain. Birds of the American class may be termed the dual purpose fowls; the Leghorns and other small breeds the intensive egg fowls. They may not lay more eggs than some of the larger breeds, but the food cost is less. —L. E. Keyser in Commercial Poultry.

Pheasants and all kinds of ornamental land and water fowl and wild animals for sale. A. L. Heinrich, Baldwin, L. I.

A whole lot of people fail in the fancy poultry business because they are not willing to work hard enough to attain success. This hard and often vexatious work is where the pleasure comes in to the true fancier, as well as in enjoying the success which results from such work.

Some Things About Eggs.

Eggs are eaten in all countries, and by almost all classes of people, as they contain every element of food needed by the human system. They are therefore the most wholesome, and usually the cheapest, of animal foods.

It would be interesting to know how many eggs are consumed daily, but it can not be even approximately estimated.

To most people an egg is an egg, and all are alike, if fresh. This is a great mistake, as they differ in flavor, size, weight and color as well. At an experiment station under the care of the United States Agricultural Department, it was proved that flavor could easily be fed into eggs. One-half ounce of chopped onion tops was mixed with the regular feed of some hens, and in fifteen days their eggs had a distinct taste of onion. Then the flock was divided; half the hens were given a mixture of wheat shorts, cottonseed-meal and skim-milk while the rest had corn dough and cracked corn. The latter laid fewer eggs, but these were larger and tasted better than those laid by the hens that had nitrogenous food; moreover, these wheat-fed eggs had smaller yolks and did not keep so well.

An egg contest was an interesting part of a recent meeting of the Farmers' Institute at Rushville, Ind. There were any number of entries, but the prizes were finally awarded to a dozen Plymouth Rock eggs which weighed one pound and fourteen ounces, and a dozen light Brahma eggs, weighing one pound and eleven ounces.

It pays to raise good stock for the sake of such eggs as these, and for the meat as well. An Indiana farmer sold some Black Langshan hens by weight, and each brought him \$1.10, as they averaged

eleven pounds each. They had been fed in the barnyard with other common stock, no special care being given them.

Few people know that millions and millions of eggs are now being canned every year. In handling vast quantities in cold storage, numbers are cracked and broken, and these, instead of being thrown away as formerly, are hurried to the factory, where whites and yolks are separated and each is put up in air-tight cans. If sweet and fresh when canned, and the cans are not defective, they will keep indefinitely. Bakers and confectioners, use these in preference to whole eggs, and our export trade takes thousands of cases to foreign shores.

Still another means of preserving them is now in vogue. They are dried or evaporated. The process is simple, much like fruit drying. The shells are removed after steaming and blowing hot, dry air over them, and nothing is found within but a dry powder. This is ground, put into cans, and labeled "dried egg." This can be used in baking like ordinary eggs, or, with the addition of a little water, may be made into an omelette. I am told that our War Department sends thousands of cans of egg meal to our soldiers in the Philippine while England ships even more to her troops in South Africa.

Even spoiled eggs can not get away from the twentieth century farmer, unless he wastes his opportunities, for all but the "blackest rotten" of them are wanted by tanners in the process of tanning costly leathers. Spoiled eggs are said to put a finer gloss upon leather than the fresh ones do. There is a special way to prepare them for the market, which offers some six cents a pound for them.

The Australian Laying Competition.

For six years the Daily Telegraph, Sydney, New South Wales, has been conducting laying competitions. The readers have been kept informed concerning the progress of these competitions since it was first started.

These competitions begin April 1 of each year and end March 31 the following year. April 1 in Australia is similar to October 1 in this country, the season being reversed in Australia because it lies south of the equator. Six pullets less than one year old makes a pen, no males being used. The competition is under the management of Mr. D. S. Thompson at the Hawkesbury Agricultural College.

It has been the rule to select 100 pens for these competitions but last year the rule was changed. Forty of the pens which were in the competition were selected to continue under test for another twelve months in a two year's competition, while sixty new pens were put in for the regular annual competition.

From the Secretary, Mr. A. A. Dunnicliffe, Jr., we have a copy of "The Daily Telegraph" for April 1, from which we get the report which follows:

In the two year's competition Mr. Wakfer's Black Langshans which made a record of 1481 eggs in twelve months came out leaders with a record of 1006 eggs the second twelve months or 2487 eggs for six hens in two years, an average of almost exactly 422 eggs per hen for twenty-four consecutive months. This is a record which stands unequalled among all the records ever made. A pen of Black Orpingtons made a record of 1054 eggs the second year and a two years' record of 2301 eggs. The third pen dropped notably below the first two in productiveness. In the second year the third pen in this competition made a record of 841, with 2278 as the

record for two years. The records for the second year ranged from 484 to the one made by the winners. Black Orpingtons, which stood second in the competition were also represented by a pen at the foot of the list with a record in the second year of 484 eggs and for two years of 1382.

An analysis of the report indicates that when hens do not lay well the first year they make even a poorer showing the second year. The reverse of this seems to be true also, Mr. Wakfer's Langshans are of the pure Chinese type, as they are daughters of birds imported directly from China. They have made a record that makes them the most notable pen of fowls on earth, when it comes to real practical value.

The eggs from all these pens were sold in the market at auction, as eggs are sold in that country. Not being fertilized they were of no use, except for market purposes. The eggs produced by the winning pen in two years sold in the market for \$57.96.

The total cost of feeding the 240 hens in the forty pens of the two years' competition was a fraction over \$1.60 per head. During the year maize, (corn) was worth close around \$1 per bushel and wheat was about the same price, while bran and middlings were both high.

The value of the eggs produced by these forty pens was \$723.06. Deducting the cost of feed the profits amounted to \$338.26, an average of \$1.41 per hen.

This is a remarkable showing when we consider that the hens had been confined to runs about 16x85 feet for twenty-four months. In the regular annual competition sixty pens of six hens each were entered. The twelve pens ranking highest were all White Leghorns. It is remarkable that every one of the twelve pens made records of more than

200 eggs during the year for each of the hens in them. These records ranged from 1474, the winning record, to 1210. Here were seventy-two hens, picked up at random, almost, in New South Wales which produced 15,154 eggs, an average of a little over 210 eggs each. It would be rather hard to find seventy-two as good hens in this country, we fancy. It would have been just as impossible to have found as good quality in the way of productiveness in New South Wales six years ago, but these competitions have taught breeders how to select lay-

From Mr. Thompson's report we extract the following:

"After the success attending the five complete series of annual tests, in which data was accumulated which proved original and of great value and acceptability to many parts of the world, it was a happy thought of the organizing secretary and management to test the productiveness and stamina of hens for a further period of twelve months.

"Just as the five preceeding tests were the first of their kind in the world, so now will the demonstration be the



A Colony Coop Made of the Brooder Coop.

ing stock and the value of good layers. When such competitions become possible in this county we shall see a great change in the productiveness of our flocks.

The total cost of feeding the 360 hens in the competition was \$609.60. The market value of the eggs was \$1484.18 leaving a profit of \$874.38 or almost exactly \$2.44 per hen.

first of a practical test in comparison with the capacity, stamina and profitability of first and second year hens. Until these competitions were commenced a great many erroneous ideas prevailed in regard to poultry-keeping. Many of them have been dispelled. No doubt the present data in regard to second year hens will be new to the scientist in that the time is not yet, that the

whole of the eggs contained in the ovary of a hen, can be rushed out in the space of twelve months, yet it will be new to the layman that it is now getting possible to bring out the seven years' laying capacity of a hen in the space of twenty-four months.

"There is still a good deal to learn as to how this can be done, not only in the output of the desired number of eggs in the shorter time, but in accomplishing this with the least possible mortality. This is where the records of a two year's test will be of great value. The series

the replacement of a bird. Now this compared with the fact that some pens lost fifty per cent. of the competing hens opens up a big avenue of thought and research during the future continuance of these tests which may solve for us this problem. Great egg machines, to put out large numbers of eggs in a short time, is only one part; how to do this without the early breaking up of the machine is the other. These two-year tests should do a great deal of good in this way: To get early pullets, which is absolutely necessary to make poultry



Sliding the Frame to Feed and Water.

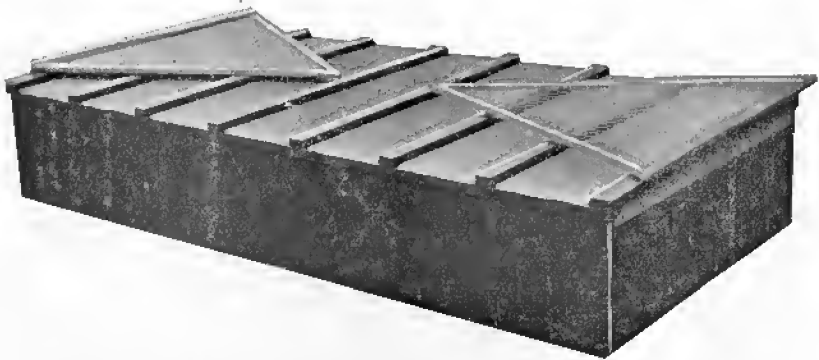
of five one year tests demonstrated how to breed, when to breed, how to feed, when to feed, and what to feed, and brought the accomplishment of a possible lay of 250 eggs per hen, and now the two years' test has proved that this can be done without the loss of a single hen, the two leading pens running right through the two years' ordeal without

farming pay, breeders have had to resort to breeding from untried pullets with many hereditary afflictions, thus increasing weakness of stamina and susceptibility to disease, and if only the tried specimens of two years are bred from, a bird of stronger stamina will be produced.

"The two years' test has demonstrated

that it will pay to carry the best layers over the moult for the second year's laying. Here is an illustration of the benefit of the divisional pen system, with the picking out of the most likely pullets, and penning them up in pens in grades of best, second best, and third best layers, it will be found that many of the hens will pay very well to keep for a second term, and just as decisive will the fact be that many of them will not pay. To market the second and third grades will add to the profit of the best.

For this, the first double test, it was found that the pullets laid an average value of \$4.12 per head, and consumed \$1.68 worth of food, leaving a profit per head of \$2.44 while the old hens yielded \$3.01 worth of eggs, and consumed \$1.52 worth of food, leaving a profit per head of \$1.49, and a great advantage to the poultry farmer would be the increase weight of the eggs. It was found that in the general average the weights increased appreciably in the eggs laid in the second term.



The Ends are Hinged and Folded Back When Coop is Closed.

White Diarrhoea in Young Chicks.

Written by Dr. F. W. Ross.

This disease causes more deaths in young chicks than almost all others combined, often taking entire flocks in a short time. It is practically incurable unless immediately checked; once getting in a flock it is hard to eradicate.

The best way to cure it is to prevent it. The Department of Animal Industry at Washington has been investigating the disease and suggests a simple means of prevention.

The bulletin says, wash the eggs in pure alcohol. Now this does not mean impure or denatured alcohol, neither does it mean to use wood alcohol as many may do and kill the chicks.

These investigations and bulletins always give the result of a series of tried, tested and proven experiments. The working details are not necessarily mentioned, but you may depend upon it when the department says it has found a cause and suggests a remedy, back of it all is the work of real qualified government experts.

Now these experts may not be able to tell a Wyandotte from a Cochin, but they do know how to investigate disease.

There has been a very important and valuable discovery made by the department, and it is to the interest of poultrymen to profit by it. So do as

they advise, and not try to improve on the methods recommended. You might think of many different ways to disinfect the eggs and try to improve. Just stop and consider that all this experimenting with dozens of methods they have tried and sifted down, the alcohol is the best, safest, quickest and cheapest, and has no bad effects. Take my advice and do as they say. There may be other ways, but don't risk any chicks or time experimenting. If they say alcohol to cleanse the eggs, use alcohol exactly as told.

Now the valuable part of the investigation is that the disease is due to a germ, which may be in the stools of any fowl at any age.

In old fowls it seems to be harmless, but in young chicks it is fatal. Now experiments demonstrate that the germ is left on the egg in passing out perhaps in small numbers. The process of incubation furnishes the very method of breeding, hatching and spreading the germs, increasing the growth and even possibly the extreme virulence. For the incubator is **the very machine** used to grow and multiply germs in the medical and scientific investigation of disease.

These germs are found by the microscope in the dropping of fowls and, apparently harmless to grown adults, they are deposited on the coating of the egg in an incubator. There they hatch and grow and multiply. By the time a chick is ready to come out he gets some of this germ culture in his mouth, absorbs it and straightway starts the growth in his own body, which multiplies fast and in a few days he has diarrhoea and dies. Giving through his stools the disease to other chicks and thus spreading indefinitely.

In a hatching I saw today some Rocks and Leghorns both hatched together in the same incubator under exactly the same conditions. Nearly all the Rocks have the white diar-

rohea and so far none of the Leghorns. Some one will say the germ must have been inside of the egg and hatched with the chick. It looks reasonable but such is not the fact. The germ was **on** the egg shell and the inside of the egg played no part except to act as the breeding place of the germ which caused the diarrhoea.

Now the germs which cause the disease may be like those of typhoid fever in man. These must remain in contact with decomposing animal or vegetable matter a time before they have advanced sufficiently far to reproduce the disease in man who takes them in his system through food and drink, mostly impure water.

You might drink typhoid germs **perfectly fresh** and not have the disease: yet if allowed to incubate a few hours, are virulent infection.

Now after the germs have passed through the bodies of the chicks from the infected egg shells in which they have caused the disease, they are in turn, after a proper change, carried into the crops of the well born chick who gets the disease, and thus it spreads from one to the other along an endless chain.

This explains the necessity, first of removing the sick and second, thorough cleansing and disinfecting the discharges from the sick chicks. Removing, drying, sunlight, all are disinfectants.

You must go back of that. You must fumigate the incubator after each hatch with formalin or wash with formalin, five per cent. solution. I suggest formalin as it is non-poisonous and will not corrode the metal parts as sulphur or bichloride, and it evaporates after accomplishing its mission and leaves nothing behind to poison the chicks, as other germicides would do.

Now washing and cleansing, first, the eggs with alcohol, then the incubator with formalin, then the brooder with the same and you have a safe,

sanitary condition in which to rear your chicks.

This plan properly adhered to, in every detail to the letter will save thousand of chicks yearly and is one of the latest and best and simplest recommendations of our Department of Animal Industry as maintained by the government.

If on top of all this you give your chicks plenty of sunlight and fresh air, you will be more than satisfied with the results.

Remember, any one of the processes recommended, if neglected may destroy the value of your work and you have the loss of the chicks to pay for your carelessness.

Now many breeders consider that "chilling" is the cause of the diarrhoea. This is true in a measure, but is only in the part in which the chilling plays as it reduces the bodily resistance of the chick and makes it easier for the germs to grow. They would not grow, if there were **no germs** to develop in the chick, to start with.

The Philo System of fireless brooders, demonstrates that the **cold alone** is **not** the cause of the disease, for he broods chickens without artificial heat, in the coldest winters and **no diarrhoea**.

Aside from the disinfecting and cleansing of the eggs, incubator and brooder, the most important factor to secure and maintain good health in your chicks is plenty of fresh air and, above all, sunlight.

Don't put your chicks sick with white diarrhoea in the shade, or some dark cool place. Give them sunlight and air, and, like many a case of roup, thrown out of doors to die, to our surprise we find the chicken not only stand the exposure, but actually gets well.

This very thing will happen. Take part of the sick flock and keep them dark and shady and damp and the other half, of the sick chicks in the sunlight and air and while all in the dark and shade will

die, many of those, if not all, in the sunlight will live.

Fresh air and sunlight will destroy more germs and prevent and cure more disease than all the drugs in Christendom!

Remember besides, to treat the incubators and brooders before using with all the sunlight you can get. Most germs die when exposed a few hours to direct sunlight.

Dry air and sunlight will even destroy the germs in the droppings of the sick chicks without other chemical aids. But to keep the droppings damp and dark is courting disaster.

Many persons say "I take no stock in germs." They might just as well say they don't believe a kernel of wheat will grow if planted. The microscope sees and classifies the germ as well as your eyes unaided can tell corn from wheat and just as accurately.

In the matter of established facts it is no matter what you think of them, it is that it is so. Don't waste time trying to prove or disprove theories, accept established facts.

We shall be pleased in future issues to answer any pertinent and reasonable statements or inquiries or objections advanced.

The hen that lays all the year around is the hen for me but I am more especially interested in the winter egg proposition. I breed and feed for winter eggs and I get them. All the male birds that will head my breeding pens next year are now hatched, (February 14) or will soon be hatched, from eggs laid in winter this year; all the hens that are to be admitted into my breeding pens have proved themselves to be good winter layers. I am acquainted with each individual bird and have my breeding pens made up in my mind a year ahead of time.—Ex

What Does It Cost a Year to Keep a Hen?

BY EDGAR WARREN.

What does it cost a year to keep a hen? This was the conundrum propounded to the chairman of the Committee on Agriculture at Washington a few days ago. The congressman who asked the question was in a facetious mood, and the question was greeted with ripples of laughter. But it is no laughing matter to several millions of people in the United States. It is a more important question to the poultry keeper than the cost of our army and navy, the amount of the river and harbor bill, or even the fate of our foreign dependencies.

The Boston Herald took up the question, and offered three small prizes for the best answers. Many of the letters received were written in a jocular vein. But the three that were awarded prizes treated the matter seriously. The first prize was won by Robert A. Lynch, Malden, Mass., who keeps a flock of twenty-three White Plymouth Rock pullets, and who finds that it costs $4\frac{1}{2}$ cents a week for each pullet, or \$2.21 a year. Mr. Lynch did not enter into details as to his method of feeding, but states that he keeps them on "good mixed grain."

The second prize was won by Mrs. G. F. Merrill, of Hampton Falls, N. H., who entered much more fully into particulars. She says: "If you want a hen to lay eggs you have got to feed her well. My hens have laid well all winter. The following is what it costs to keep a hen a year: Oats 58 cents; wheat, 39 cents; hen ration, 28 cents; cracked corn, 16 cents; cabbage, 4 cents; ground oyster shell, 2 cents, which makes a total of \$1.47." Mrs. Merrill states that the ration which she uses is that recommended by the Maine Experiment Station.

Levi Clark of Waltham, Mass., finds

that it costs him at the present prices for feed \$1.73 a year for each hen. Corn, wheat, oats and barley mixed are fed at the rate of four ounces a day. "Accessible at all times should be a hopper mixture of bran, middlings and corn meal, also green feed such as cut clover, alfalfa, cabbage or mangels. Animal food, such as cut bone or beef scraps, should be fed every other day, Mr. Clark makes the point that a hen may be kept alive for 80 cents a year, but if she is to lay generously it will cost for feed more than twice that. He also says: "A swill-fed hen produces eggs quite liberally for \$1.25 per year, but they are of swill quality."

Putting these reports together and dividing by three, it will be seen that the average cost to these three poultrymen for feeding a hen is \$1.80 a year.

An Experiment Anyone May Try.

Many readers of this paper would like to find out just what it costs them personally to keep a hen a year, but are deterred from doing so by the trouble it involves. I will suggest a method that will give them approximately the result they are after, with the minimum of bother and loss of time.

There are 52 weeks in each year. Now, it follows that the cost of feeding one hen 52 weeks will about equal the cost of feeding 52 hens one week; and if you feed 52 hens one week you will ascertain about what if costs to feed one hen 52 weeks. I put in the word "about," for absolute accuracy is impossible. Even where the records are kept for a full year you cannot tell what it costs to feed an individual hen. Some hens in the pen will eat more and some less. Hens will eat more at certain

seasons than in others. Only Omniscience could tell what it costs to keep an individual hen a year. But the experiment I suggest will show us near enough for all practical purposes.

Fifty-two hens in a pen will eat a bag of cracked corn in a week, costing \$1.50; or a bag of wheat costing \$2; or a bag of barley costing \$1.90; or a bag and a half of oats costing \$1.95.

Corn is the cheapest thing we can feed. If the grains mentioned were mixed together the cost would be \$1.84. Mixed feed, alfalfa and beef scraps, cost more than corn. So if there were no mitigating circumstances the cost of keeping a hen a year would be from \$1.75 to \$2.00, with the present price of feed.

But most of us are in a position where

we can reduce the feed bill to a certain extent by the addition of table scraps, stable sweepings, waste vegetables, etc., to the ration. The farmer is the most fortunately circumstanced of all; for six months in the year his hens may range at large and need to be fed only a little corn night and morning. The other six months waste from the cellar and stable keep down the cost.

Let us now sum up what we have learned: It costs the average poultryman in the vicinity of \$1.50 a year to keep a hen. It costs the farmer not more than \$1.

In another article I shall further consider the object, taking up a phase that is closely allied to the one I have been treating.—American Poultry Advocate.

Strong And Weak Vitality.

BY PROF. JAMES E. RICE, CORNELL UNIVERSITY, ITHACA, N. Y.

Before the Poultry Institute, O. A. C., Guelph, Ont.

To my mind the most important problem to-day is for the poultryman to have the ability to renew his flock. More failures have occurred from that one cause than from all the other causes put together. The failure to renew the flock has been due of course to many contributory causes, some of them due to improper housing, some improper methods of feeding, some improper methods of incubation, and some improper methods of breeding, but I believe that much of the trouble has been due to the lack of appreciation on the part of the person collecting a breeding stock and the importance of choosing fowls of well known vitality. Now the question of selecting for vitality is all the way through the whole history of the fowl from the egg to the baby chick, the chicken partly grown and the fully matured fowl.

should be fully developed and of normal size, laid by a mature fowl of ideal shape and vigor, an egg is perfect in its shell, shape and size. It is pretty well proven that eggs that show weakness in any part show that there is a lack of health on the part of the hen. Fat nutriment or some contributory cause produces a weak-shelled egg, and if the shell is weak we have every reason to believe that the inside of the egg is usually weak, and we should, therefore, get a weak chicken so that we must begin by selecting the egg if we want a strong chick. If you can see chickens improperly incubated and perfectly incubated, you will see that some came out covered with good down, large and full of life, squirming and full of vigor, and they have little eyes that stand out like shoe-buttons; they are so black and bright, and this is one of the best indications. And they have shanks that are fat and plump as

To begin at the beginning the egg

compared with the little shrivelled up shanks of the weak ones. They have a beak that is short and thick, and of a good color as compared with a pale beak. I believe in the large commercial ranges, we have got to come to the point of eliminating these birds, putting them by themselves beyond any possible chance of ever getting amongst our breeding stock. When they are getting

chicks showed from the very start and continuing right straight through, up to the present time, normal, vigorous, healthy, others showing delicacy and low vitality. We went in there and and picked all those of low-vitality chickens and marked them, and leg-banded them and numbered them, and we did the same thing with the strong vigorous chicks. We did not take a



Here is "John" who is dressed for business and is looking at the two-pound broilers in a Philo System brooder coop March first.

their chick feathers we have another period in their lives when they tend to show their low vitality. We have started a line of investigation at the University that we hope to carry on for a good many years to come. We selected brothers and sisters of white Leghorns hatched in the same machine and in the same process, and yet some of these

chicken that had low vitality that we felt would probably not live; because there would be no use in spoiling our experiment in that way.

And you can see the difference between these chickens when they weigh two pounds apiece and later when they were put into winter quarters. The

Continued on page 18.

The Poultry Review

*Published Monthly
For Farmers and Poultry Fanciers.*

PUBLISHER. E. R. PHILO,
ELMIRA, N. Y.

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We are striving to see how good a paper we can publish, not how many pages we can fill.

In this progressive age poultrymen haven't time to read ten articles to find one of some practical value.

We will do the skimming and give you the cream. We have men connected with the Poultry Review that have studied the practical part of poultry keeping a score of years.

We request contributions on all topics of general interest to poultrymen. Good photographs are especially desired.

EDITORIALS

The exceptionally hot days of June have been more trying on our poultry than the coldest winter weather. Our grape vines planted last season will be a protection next year, but are rather small now to keep out the direct rays of the sun. Although the coops are adjusted so the direct rays cannot fall on the fowls and chickens, it must be uncomfortably warm. The winter colony coop provides the best protection and when there is some air stirring the fowls do not suffer from excessive heat,

Owing to the extreme heat a brood of chickens from very valuable fowls were placed on the shady side of a building. Just at the time the chickens were taken from the incubator the weather changed and was for a few days uncomfortably

cold. We thought if the chickens could be successfully brooded in the coldest winter weather without heat, we should be able to raise them without the sun, but soon learned from the condition of the chicks that we would not have any in a few days longer if not changed to a sunny spot. The change was made and a half day's sunshine changed conditions and, with the exception of two or three, are progressing nicely.

The difference between success and failure in the poultry business may be found in looking after the little details and watching conditions. When one cannot see chickens out of condition or fails to overcome improper conditions that may be found in many poultry plants, he cannot expect the best success. Neglect is often caused by a lack of time to properly do the work. In such cases we would advise smaller flocks and better care and the returns will be better and the business more satisfactory.

Possibly the best whole grain food during the very warm days is whole buckwheat. It is also valuable as an egg food, and fed largely it is almost impossible to get hens to set. It does not possess heat-producing qualities as corn and should be fed during the warmest weather, when it can be had at a reasonable price. When fed liberally the yolk of the eggs will be very light in color unless the fowls have plenty of grass or clover clippings.

In this issue we have a practical article by Dr. F. W. Ross, who knows a few things about the "bugs" that make us sick, and will help the readers of Poultry Review to get rid of them. The Doctor also has several strains of very choice Houdans and the strength of his chickens plainly shows that there are no disease germs on his eggs.

We are frequently asked how to stop broody hens from setting. In our experience they are just like men; after setting awhile they prefer that to work and are determined to do nothing. The only cure for a lazy man is to go to work as soon as he feels the spell coming on, and just so with the hen. If taken the first night⁸ after laying time, and placed in a cool coop with a slatted bottom so the cool air will come up under her, she will soon give up the habit and again commence laying. If allowed to stay on the nest several days it is sometimes necessary to give them a plunge in a pail of cold water when the weather is warm.

Body lice on hens are more difficult to get rid of than the red mites found on roosts. During these extremely warm days it requires all the vitality of the hen to support the lice and unless they are killed the hens will not continue to lay. When convenient to provide a dust bath of dry wood ashes the lice will be hard to find. To make a quick job of the work one good application of Pyrozone will not only kill every one of the lice, but will completely destroy the eggs that produce them, and frequent applications will cure the birds of feather pulling or any skin disease they may have. The advertisement may be found on another page in this paper.

There are some things about fertility that may not as yet be fully understood. A poultryman, while visiting us the other day, stated that one of his hens was producing chickens from a mating three months after being separated. While it is very possible, we have never seen any results from a former cross after a separation of two weeks, and many times one week has completely changed the chickens to the latest mating.

This we do know to be a fact: An egg may be fertilized forty-eight hours

after mating. After our first 1908 pullet commenced laying, May 30th, she was mated to a cockerel of the same age. In just forty-eight hours she laid the third egg which was fertile and from it we expect a chicken next Tuesday, June 23d. We now have quite a lot of these pullets' eggs incubating and every one thus far has been fertile. The eggs are small and may not produce very large chickens, but we can only learn by experience, and are not sure but the third generation will be possible before the end of 1908.

Just a word on another line. The possibilities in improving fruit and berries are fully as great as in breeding poultry, and as the two work so nicely together, we are not sure but that it would pay to have a little gardening talk occasionally.

If you will look over the strawberry bed as soon as this paper reaches you it will not be difficult to find plants that have not produced any berries. These plants will send out the most runners and will start a lot of very thrifty plants which one would naturally think superior to those from productive plants. Some of these plants will be productive, but not nearly as good as the sets from plants producing fruit, and should be destroyed at once. By carefully noting the most productive plants and those producing the most perfect berries and setting young plants only from these the quantity and quality of the fruit will be greatly increased and improved.

The first plant set on the runner will produce more fruit the following year than those from the extreme ends of the runners. Small two-inch pots set in the ground under the first set so the top will come about level with the surface of the ground and the plant started in the small pot after filling it with rich soil will make plants that can be set the last of July and produce a full crop the following year.

time will come when they have reached the limit of their resources, and they will not be able to produce eggs. It will show especially in the moulting time when they are asked to reproduce and put on a new coat of feathers.

In some cases these chickens that were weak have overcome it to such an extent that you would hardly be able to tell them now from the strong; just the same as a child is born weak, by being kept under the most favorable conditions overcomes that weakness and eventually grows to be strong. Yet if we know anything about the law of heredity—like producing like—there will always be a tendency of the individual that was once of low vitality to break down or reproduce that weakness.

We then come to the problem of picking out the strong and the weak for breeding purposes, going right into the pen and picking out those fowls that show strong vitality.

I believe that we can pick them out so that when we put them into the breeding pens they will give us strong or low vitality according to the birds we selected. It does not necessarily follow that if we picked out a hen who is now showing low vitality that she would produce chicks of low vitality. I picked out a hen of low vitality and Prof. Graham said, "Don't take her, she is too well known, she has a wonderful record behind her." It is not an indication that that hen has not been a hen of strong vitality. She might be of low vitality because of that heavy egg production. I have seen hens of the strongest possible physical strength, the picture of health, and that had never laid an egg. There was no reason in the world why they should not be strong, healthy and vigorous. I maintain that no matter how good a trapnest record nor how great a reproduction power the hen may have, if at the time she produces these eggs she is of low vitality her chicks may be of low

vitality. Sometimes the very fact that a hen is the best hen we have got on our place will indicate she is not a good hen to breed from. The best hen we have got on our place at the present time, hen No. 61, laid 216 eggs in the first 10 months of her laying period, she was most vigorous and could give us the most fertile eggs, and the most hatchable eggs out of seventy hens. Her record shows right straight through that she was one of the most reliable hens in the whole place. She had a constitution that would stand up under heavy feeding.

We have found hens that in their general appearance and almost everything that we generally understand to be egg type, and yet they were not good layers. We have, by caliper measurements and by the use of scales and in other ways, found that there is such a thing as an egg type. We have just worked on the white Leghorns and the Barred Plymouth Rocks. I believe strong production is associated with strong nervous disposition. The egg producer is a motherly hen, and they will show mentality. They will be the most intelligent hen you have in the bunch. That hen No. 61, is the most intelligent hen we have. You can handle her and yet if she did not want you to catch her, she knows how to get away from you. She was in an experiment where every hen had been dipped in Diamond Dyes, every single bird of these 250 hens was picked up and personally examined, a record made of the conditions of the moult in different sections of the fowl's body and whenever we drove the hens into the catching frame that hen (61) was the last hen to go through the hole, she always managed to get away, she showed mentality. That hen had brains. The same thing is true of the best dairy cow, the best horse, they are animals of strong mentality.

The hen that is sick or weak or tired or of low vitality usually carries her tail down instead of up, a strong fowl of strong vitality shows a good thick shank. The head shows up pretty well, has a large comb and face appendages show greater power and greater physical strength. I have seen weak fowls with very strong combs, but when you compare Brahma with Brahma or Leghorn with Leghorn, the comb and face appendages are one of the strong marks of strong vitality as compared with weak vitality, strong physical power as compared with the low.

The comb point is an indication of physical vigor. A hen carries her certificate right on the top of her head. It is one of the evidences that the blood is circulating properly.

If a chicken at the age of two or three months gets a large amount of fresh meat it will get a good development of comb.

I believe early or late maturity indicates strong vitality. I have seen chickens that matured late come up to full strength and power. A fowl that has got a long joint and a weak breast and a long neck and generally a consumptive type they have a long flat crow head.

Strong physical power is associated with a bulkier head, and with a thick curved beak. I believe as far as I have observed you will find more weak fowls of the crow head type than you will of the thick type. A fowl that has low vitality is likely to have knock-knees and stand upon the feet close together, and a fowl of low vitality is likely to stay upon the roost, it will be the last one to get off in the morning and the first one to get up there at night.

If you go into the hen-house in the morning and see the ones that are on the perch you are very likely to find the fowls that are of low vitality. They are not full of snap and vigor.

Another point that indicates low vitality is a cold shank. It is one of the

best indications of a rousy condition.

Last fall we killed all the hens in one of our experiments and we found that the fattest hens were the hens that were in the best laying condition, and since that time we have been making very careful observations along that point. A hen to be in a good laying condition must have fat in her body. The production of eggs is based upon the fact that the hen has got lots of stored up energy in her anatomy, and a hen cannot lay an egg until she has got fat in her body, because the yolk of an egg is about half fat and she has got to have oil there to make the first part of the egg. The three fattest hens we killed were in the best laying condition and the three poorest hens we turned out by themselves and there was not the faintest chance of their laying for two or three months. They were not poor hens in the sense of being thin. They simply did not have a large amount of fat in their bodies.

Cycle Brooder-Hatcher, new, for sale replaced by larger machine. Take \$5 delivered, D. Thompson, DeKalb, Ill. 6

SUBSTITUTE FOR ICE.

Everyone living in the country should have a Home-made Refrigerator. Very best substitute for ice; keeps butter, hard, milk sweet, eggs fresh. Full plans and description, 15 cents.

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It will pay you LARGER, SUMMER PROFITS, requires very little land and the least amount of work of any crop grown. Sells for \$6.50 to \$9.00 a pound. Why drudge the year round with chickens when a little attention during six months of the year to the cultivation of ginseng will yield greater profits? If you are looking for a pleasant, profitable business write for circular.

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GAPES AND ROUP DON'T TRY TO CURE

Gapes in chicks, Prevent them—It's easy. 45 years raising chicks and not a gap. I positively cure every case of roup in three days. Economize in your feed bill at least one-third. If interested write me.

J. F. SKEES, KENSINGTON POULTRY YARDS
MARION, OHIO.

Breeding and Care for Early Maturity.

By E. W. PHILO.

Although we have bred and handled fancy poultry for over thirty years, there is much yet to be learned, and a day seldom passes without adding something to the store of knowledge.

While firm believers in pedigree breeding to get certain results, we never have seen the results so plainly manifested as at the present time in noting the progress of development and maturity of our January-hatched pullets.

Sixteen Orpington pullets and nine cockerels were the result of our twenty-seven chickens hatched January 1st, 1908. Four of the pullets were bred from a three-year-old hen and three from another hen of the same age, the only hens in the yard, with but one exception, that were not hatched last season. They are not show birds, although carefully bred from the best eggs and fowls we could buy, and on this account were not used for breeders last season. Although three years old they are decidedly the most productive hens we ever raised and it was only by accident that they were not marketed last season, as both hens were to be dressed for market on a certain day, when they were found on the nest laying eggs when nearly all others were resting and the eggs were bringing forty cents a dozen in the home market. This, of course, saved their necks until they were found non-productive.

The smaller hen of the two commenced moulting after laying about forty eggs more making it necessary to hold her over the moult. Even then she was too much for us as she laid an egg every week when her feathers were nearly stripped, and at the end of three weeks, before the feathers were fully matured, she gave us five eggs in a week and the following week, early in December, laid six eggs.

The other hen, about two pounds heavier, laid fully as many eggs before moulting and was the first to commence laying steadily, but did not lay any eggs during the time of growing the new feathers, which lasted but a few days over three weeks. The two hens were mated to a pedigreed cock bird which was bred for early maturity, and was also an exceptional show bird, weighing eleven pounds at eleven months and was hatched early in September, 1906.

The tenth of December we started the hatcher with thirty-three eggs, twenty-two from the two productive hens and eleven from our best exhibition mating. Every one of the smaller hen's eggs produced a chick and the other eggs hatched well and the chickens were all strong or they would not have stood the out-door brooding on the second of January.

Although the development was not as rapid during the short, cold days of January and February as it would have been later in the season, they continued to grow and develop naturally, without any setback and when nine weeks old averaged two pounds each, the cockerels being about a quarter pound heavier and the pullets a quarter pound lighter. At this age the sixteen pullets were separated from the cockerels and given a new brooder coop, three by six feet, and, on account of being crowded for room, were still confined to this small coop until May 30th, when we were surprised to find the first egg from one of the three pullets hatched from an egg of the heavier hen and on the two succeeding days the two full sisters commenced laying and were then only about half matured, weighing but four and a half pounds each. Two days later all four of the pullets hatched from the small hen commenced to lay, while

those from the exhibition matings are, if any thing, larger but have not as yet commenced laying and we do not expect they will before July 1st to 15th.

The one thing that has surprised us most of all is the fact that all pullets from the utility mating commenced laying within a week after the first commenced and there was only three days difference in the starting time of all pullets from one mother, while those hatched from other matings sometimes vary a month or more in the length of time required before commencing to lay.

The two hens above referred to are the results of the third generation of selecting for utility, but were not used for breeders on account of the under-size of one and white in the ear-lobe of the other where it should be red.

Several things are learned from this experiment: First, that to get the best utility birds we cannot lay too much stress on show points. Second that breeding for great egg production for several generations will produce the

good qualities of their ancestors to a much greater degree than those bred for exhibition, and that the small space system and the brooder coop will develop the pullets in the best possible condition and in the shortest space of time.

The following is the egg record of six of the pullets in the winter colony coop, with one cockerel, from June 14th to 20th: Sunday, 4; Tuesday, 5; Wednesday, 4; Thursday, 4; Friday, 5; Saturday, 5. We expect an average of five eggs per day next week and will be surprised if we do not get six eggs at least two days during the week.

The average weight of the six pullets June 1st was four and one-half pounds. June 15th the average weight is five and one-half pounds and we expect two pounds will yet be added to the weight of each pullet. The pullets from the smaller hen are one-half to one pound heavier than those hatched from the eggs of the heavy hen.

Questions and Answers.

Do you approve of hatching by incubator all the year, or only during a certain period?—J. R. H.

The locality, market conditions, etc., have much to do with the time of the year best adapted for hatching. We expect to hatch every week this year.

It requires skill to raise good chickens during July, August, November and December. The months best adapted to the work in this locality are March, April, May, September and October.

We have fully as good success during January and February; but it requires close attention and the very best care. The fact that we now have many pullets laying, May 30th and 31st, that were hatched January 1st and 15th this year is pretty good evidence and proof

of the success of raising winter chickens by our system.

* * * *

What is the difference between the term "cock" and "cockerel"?—J. R. H.

A cock is a bird hatched before January 1st and a cockerel is hatched after January 1st. The term cockerel is used during the spring months to distinguish a bird two years old from those hatched the previous year, and is often used when the birds are fifteen months old. We consider a bird a cock when one year old.

We are now breeding from cockerels hatched in 1908 and if we were to write an article on this work using the term cockerel nearly every reader would think the bird was hatched during 1907.

What are the main points to observe in mating?—J. R. H.

The lecture of Prof. James E. Rice as published in this issue covers the point in question very thoroughly.

How queer. * * * *

Do you advise keeping individual daily records of laying hens?—J. R. H.

We certainly do. Our plan is quite fully outlined in the Philo System book.

We only keep four or five hens in our best breeding pens and by close observation can distinguish the eggs from each individual hen. While we give this work our personal attention, we thought best to teach our poultryman this work, and he is now able to tell the number of the hen as soon as picking up the egg. Brown eggs are more easily distinguished than white eggs. The texture of the shell and the shape of the egg are the points to study when the eggs are pure white.

* * * *

Denver, June 16, '08.

My Dear Mr. Philo:—You certainly have devised the best of plans to raise poultry in limited quarters; but here is a proposition that I believe will puzzle you. Shall hope to see the solution in your next issue of the Review.

How can one who is away all day manage to care for poultry? I can attend to them in the morning and arrange the water question in freezing weather, but the collection of the eggs bothers me. Mr. Weeks has, I think, solved the trap-nested hen part of it. The thought just occurs to me. Why could not the egg be laid close enough to the fountain that—utilizing the fireless cooker idea to keep it from freezing—would prevent their getting chilled?

This is, of course, very crude, but nowadays you are bringing up so many labor saving and unique devices that it leads one to think what remains for a man to do who is away all day and has

no one in charge of affairs at home and who wants to keep fowls if he feels that he can do them justice.—J. S. F.

The nest should have double walls filled with non-conducting material, and for this there is nothing better than sifted coal ashes. The front of the nest should be covered with strips of cloth of several thicknesses so that one will overlap the other and close the opening after the hen leaves.

Where the climate is very cold or on very cold days a small soapstone heated and placed in one side of the nest in the morning would keep the eggs safely for from twelve to twenty hours.

* * * *

How would you produce a barred fowl from the black and white of the the same breed? I hear that it has been done. Awaiting your next issue with usual interest, J. S. F.

Barred fowls cannot be produced in a few generations from black and white fowls crossed, and we are not sure that it would be possible, although it might possibly be accomplished in eight or ten generations.

In most cases a white cock mated to black hens will produce ninety per cent. white fowls and a black cock mated to white hens will produce ninety per cent. black fowls.

With some strains and breeds such crosses will produce some mottled birds while others will produce blue birds such as Andalusians. A cross between a Black Minorca cock and White Leghorn hen will often produce all blue chickens.

Many years ago we crossed a Black Spanish cock with a White Leghorn hen, which gave us all black chickens. After these chickens moulted the first season they were mottled and each succeeding year showed more white until the fourth year when they were as pretty White Spanish as one would wish to see. If attempting to get the barred birds from black and white we

Continued on page 27

QUICK SALES AND LARGE PROFITS

Are made in the sale of the new Philo System Book and Poultry Review. One party has sold over 3,500 copies, and many others are making easy money and lots of it. It is also a pleasure to sell something that is worth more than the price asked. We have hundreds of letters from people who have saved the lives of many chickens and have also saved many dollars by applying our System. Write for terms to agents.

Poultry Review,

Elmira, N. Y.

For Sale At a Sacrifice

3 Breeding pens of Exhibition Buff Wyandottes. Winners at the Elmira show. Also one pen Columbians. Birds of the finest quality at the price of common stock. F. F. Riggs, 423 South Broadway, Elmira, N. Y.



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The POULTRY RECORD

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A new monthly journal devoted to the interests of the poultry industry.

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The Poultry Record,
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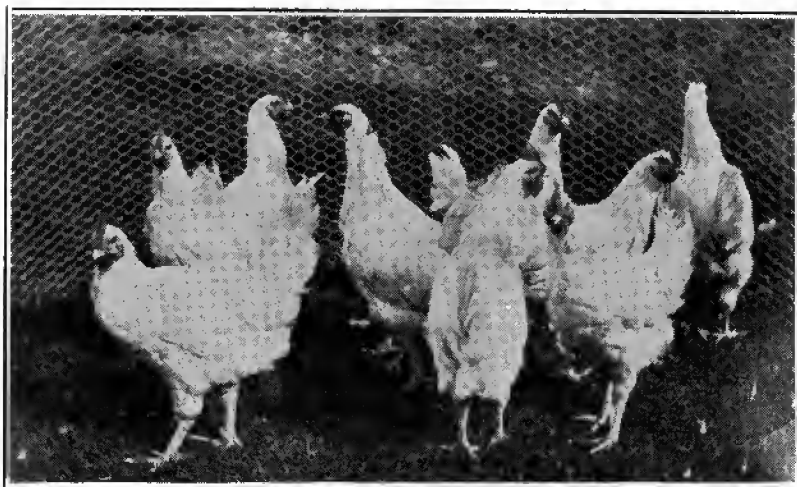
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J. F. Monroe, Prop., Sylvania, Pa





January hatched, photographed May first, when taken from the brooder coop for the first time. Fifteen of these cockerels, averaging $4\frac{1}{2}$ pounds each, have been raised in the brooder coop, 28 in. wide by 5 ft. 0 in. long, inside measurement. $67\frac{1}{2}$ pounds of poultry, raised in a coop containing about 17 sq. ft. of floor space. These cockerels are for breeders and have been grown to develop the frame rather than to take on flesh. If fed for market poultry one pound each could have been added to the weight of each chicken.

\$200.00 In Six Months From 20 Hens.

To the average poultryman that would seem impossible, and when we tell you that we have actually done a \$500.00 poultry business with 20 hens on a corner in a city garden, 30 feet wide by 40 feet long, we are simply stating facts.

It would not be possible to get such returns by any of the systems of poultry keeping recommended and practiced by the American people, still it is an easy matter when the new PHILO SYSTEM is adopted.

The Philo System is Unlike All Other Ways of Keeping Poultry.

And in many respects is just the reverse, accomplishing things in poultry work that have always been considered impossible and getting unheard-of results that are hard to believe without seeing. However, the facts remain the same and we will prove to you during the next three months every word of the above statement.

The New System Covers All Branches of the Work Necessary for Success.

From selecting the breeders to marketing the product. It tells how get eggs that will hatch, how to hatch nearly every egg and how to raise nearly all the chicks hatched. It gives complete plans in detail how to make everything necessary to run the business and at less than half the cost required to handle the poultry business in any other manner. There is nothing complicated about the work and any man, woman or child that can handle a saw and hammer can do the work.

Two-Pound Broilers in Eight Weeks.

Are raised in a space of less than a square foot to the broiler without any loss and the broilers are of the very best quality, bringing, here, three cents per pound above the highest market price.

Our Six-Months-Old Pullets Are Laying at the Rate of 24 Eggs Each per Month.

In a space of two square feet for each bird. No green cut bone or meat of any description is fed, and the food used is inexpensive as compared with food others are using.

Our new book, **THE PHILO SYSTEM OF PROGRESSIVE POULTRY KEEPING**, gives full particulars regarding these wonderful discoveries, with simple, easy-to-understand directions that are right to the point, and fifteen pages of illustrations showing all branches of the work from start to finish.

It also tells how to make a brooder for twenty-five cents that will automatically keep all lice off the chickens, or kill any that may be on them when put in the brooders.

Mr. Haviland Saves 28 Chicks in One Hatch.

Fully one-third of all the chickens ready to hatch die in the shell. After thirty years of study and practice we have discovered a simple way to save every chick that is fully developed and ready to hatch whether the egg is pipped or not. This, we believe, is one of the lost arts of the ancient Egyptians. It takes but a minute to save a chick and no skill is required. Note Mr. Haviland's success:

BROOKVILLE, MD., Feb. 27, 1908.

DEAR SIRS:—I received my copy of the Philo System at noon, the last hour of the 21st day for my incubator, containing 172 fertile eggs. About 100 were out of the shell and about thirty of the remainder were still alive, some pipped. According to directions with our hot air machine these were worthless. We immediately proceeded according to "A Trick of the Trade" in your book and hatched them all, even one that showed signs of life after laying in a garbage pail for some time. We still have 128 chicks three days old; lost but two. Many of the eggs were three or four weeks old when set.

Respectfully,

E. W. HAVILAND.

Our New Brooder Saves 2 Cents on Each Chicken.

No lamp required. No danger of chilling, overheating or burning up the chickens as with brooders using lamps or any kind of fire. They also keep all lice off the chickens automatically, or kill any that may be on them when placed in the brooder. Our book gives full plans and the right to make and use them. One can be easily made in an hour at a cost of from 25 to 50 cents.

By special arrangement we are able to give for only \$1.00 the book with the right to use all patents and one year's subscription to Poultry Review.

Upon receipt of \$1.00 you will get the book by return mail and your subscription to Poultry Review will start at once.

Poultry Review, Elmira, N. Y.

What Others Say:

OMAHA, NEB., May 11, 1908.

GENTLEMEN:—Your valuable book received in February. At first I thought it too good to be true; but the more I studied it the more I was impressed with the Philo System. I made four Summer colony coops, one Winter coop and four brooders and have wonderful success with them. The young chicks are all right in all kinds of weather, no trouble nor worry at all. No cats, dogs, rats or anything can get at them and you know where they are at all times. The last bunch of over 100 was put out in cold, rainy weather, which lasted ten days, and I lost but one chick.

With best wishes, I remain,
C. L. MATHER.

SKANEATELES, N. Y., May 4, 1908.

GENTLEMEN:—Some time ago I got the Philo System of Progressive Poultry Keeping and wish to say that one article, entitled "A Trick of the Trade," has been worth three times the amount the book cost. I have saved on my last hatch fifty chicks which are doing nicely.

Very truly yours,
W. B. KEASE.

MONTROSCILL, IND., May 4, 1908.

GENTLEMEN:—I have been using your brooder and brooder coop (my own make as per your directions in your book) since latter part of March and in all kinds of weather and they are a success. I have now something over 700 chicks hatched and all in your coops are doing well.

Yours truly, EDWARD TAYLOR.

KENT, OHIO, May 12, 1908.

DEAR SIR:—Some time last Fall I purchased your System of Poultry Keeping and decided to give it a trial. Put out the first hatch the 5th of March and had such good success with it that we continued on with it. We had twelve outside hot air brooders and six inside hot water brooders. Have done away with all of them and are using your system altogether for brooding and are having fine success with it. Have got some of the nicest chicks we ever raised.

S. L. HILCOMB.

RINGWOOD, ONT., CAN., May 6, 1908.

DEAR SIR:—Some time ago I got The Philo System and must say it is the best book I ever read on Poultry. I have tried "The Trick of the Trade" and saved twenty-two chickens which otherwise would have died.

Yours truly,
ROY MOYER.

BETHLEHEM, PA., Apr. 25, 1908.

DEAR SIR:—Your book safely in hand and have derived great benefit from it, especially "A Trick of the Trade."

Respy yours, G. H. STANFORTH.

MANTORVILLE, MINN., May 15, 1908.

DEAR SIR:—I sent for one of your Philo System books some time ago and made one of the brooders as soon as I got it, and after using it a few days I threw out my brooders with heat. I would not take a brooder with heat as a gift and have to use it. Nothing but your system for me.

Yours truly,
L. A. LUDWIG.

POTOMAC, ILL., May 1908.

DEAR SIR:—I am using your System of Progressive Poultry Keeping and consider it the best work on poultry raising I ever read. In my last hatch I saved twenty-three chickens by following the article, "A Trick of the Trade."

Yours truly,
FRED JAXSON.

Dear Sir:

River Falls, Wis., March 16, 1908.

I am well pleased with your System in Poultry Keeping. We have more than doubled our egg production.

Yours truly, J. C. Thayer.

Common Era, Ill., Mar. 19, 1908.

I have built several of the brooders as described by Mr. Philo and at present time have young chicks, a week old, out doors, healthy and strong, without being warmed by any artificial heat.

Wilson Brooks.



Fortunes in Fig Orchards



Texas Figs are the World's Fair Winners.

The famous Fig Preserves made at Aldine near Houston are the finest and best known in the world. One important thing which must not be overlooked is. that the fig orchards here never fail to produce large, profitable crops.

One Acre Set in Figs and One Town Lot, Both for \$230,

Payable ten dollars per month, without interest, no payment when sick; clear warranty deed in case of death. Local cash market for fruit. Single crop pays for land and lot. Money back in three years with annual income for life. Better than banks bonds or life insurance. If you want to enjoy life in South Texas under your own "vine and fig tree," or make a small, safe, profitable investment, write for particulars.

AGENTS WANTED.

E. C. ROBERTSON, General Sales Manager. 316 Kiam Bld'g. Houston, Tex.

Leg Bands.



Adjustable

Made to fit any size fowl, as end may be drawn up and clipped off if too long. 12 for 15c; 50 for 35c; 100 for 65c, postpaid.

Double Clinch



Same prices as above. Different size for each breed. State for what breed they are wanted.

Climax



A brass spring band with an aluminum number tag. Prices, 12 for 15c; 50 for 45c; 100 for 75c. postpaid.

All kinds kept in stock and orders can be filled same day as received.

Poultry Review, Elmira. N. Y.

"PYROZONE"

Cures Chickens

Of scaly leg, kills lice and prevents feather pulling.

Cures Dogs

of mange, e:zema, ear canker, wire fence cuts and kills fleas.

Cures Cattle and Horses

Of fouts, scratches mange and all sores and skin diseases.

Absolutely harmless, safe and sure. Used successfully for 15 years in my famous "Tioga Pointer Kennels," and in my constant work among animals and poultry and by breeders and owners of fine stock everywhere. Large bottle with full directions, sent express paid for \$1.00 and guaranteed satisfactory.

W. P. Austin, Elmira, N. Y.
391 W. Water St.

GRIT

We can furnish Best Quality Poultry Grit at Greatly reduced prices. Shipped direct from factory at Branchville, Conn.

100 pounds	50c	1000 pounds	\$4.00
500 "	\$2.25	2000 "	7.50

CYCLE HATCHER CO.,
418 William St., Elmira, N. Y.

QUESTIONS AND ANSWERS.

(Continued from page 22.)

would use the mottled and blue ones the second season.

Will you be kind enough to write an article in your next issue if possible on the best breed for capons and caponizing? I have your system and am getting your book every month. Am a new beginner and therefore would be glad to see an article on capons and caponizing. I have read articles in other books, but a good deal of your work is so different that I'm sure I would appreciate your article.—L. R.

The market you would have for the capons would have much to do with the best variety to breed for capons. The Light Brahmas have been considered best on account of the size and white pin-feathers. The White Orpingtons are next in line and have the advantage of maturing more quickly. They have white flesh which is objectionable in some markets and preferred in others. The White Rocks, Wyandottes and Reds are also good, but do not grow as large as the two kinds above mentioned.

In feeding capons whole oats and dry wheat bran should be kept in hoppers or open boxes. A mash consisting of equal parts by measure of wheat bran, ground oats and corn meal, moistened with milk or water, should be fed in the morning and a little whole or cracked mixed grain at night until one month before marketing when one part more of corn meal, wheat middlings and a small quantity of linseed meal should be added. They should then have a liberal feeding of cracked corn at night and given skim milk to drink, if possible to get it without too much cost, which not only adds to the pounds of flesh, but greatly improves the quality.

Complete directions for caponizing are furnished with each set of instruments and we have published the direc-

tions in the past so will not give them in this issue.

BURKET WHITE ROCKS

"Show Stock" Exclusively.

Send for my Show Stock Catalogue
It contains the United States 1908

WINNERS

White Rock Poultry Yards.

Findlay, Ohio

**Amherst, Golden, Silver
and Ringneck Pheasants.**

Young and Full Plumage Birds.

White Cochins Bantams.

Mohawk Pheasantry, Box A, Mohawk, N.Y.

POST CARDS

25 Beautiful Post Cards printed in colors on excellent stock and illustrated with any breed of fowls desired will be sent absolutely free if you send only 25 cents for a years trial subscription to the Poultry World. Do not delay send at once. Poultry World is a guide to successful poultry keeping and will help you make money out of the business. It is printed monthly on fine book paper, attractive cover, handsome illustrations, special well known writers. Send 25 cents for a years trial subscription and get these beautiful cards free. State breed of fowls with which you wish cards illustrated and mention this paper. Poultry World, Heron Lake, Minn.

Special Combination

Offers.

Poultry Review, one year,
American Poultry Advocate one year,
The Philo System Book,

All three for \$1.25.

Poultry Review one year,
American Fancier, semi-monthly,
one year, The Philo System Book,

All three for \$1.35.

Poultry Review, American Poultry
Advocate, Poultry Fancier, one year,
The Philo System Book,

All four for \$1.50

Poultry Review, Elmira, N.Y.

CLASSIFIED ADVERTISEMENTS

Advertisements will be inserted under this heading for one cent a word each issue. Numbers and initials count as words. All ads. will be classified under their proper headings, thus enabling the buyer to readily find the breed he wishes to purchase. No ad. accepted for less than fifty cents. Poultry Review is sent every advertiser during the time his ad. is running.

ORPINGTONS.

S. C. Buff Orpingtons, 6 first-class breeding pens, mated prize winners in each pen. Chicks 8 to 10 weeks old. Send for circular and prices. 7
Kordec Poultry Farm, Frairie Depot O.

WYANDOTTES.

White Wyandottes are money makers. Mine are very white, fine shape, good size, splendid layers. Eggs \$1 per 13, \$2 per 40. Miss Mary Berriman Muncy, Pa. 2

LEGHORNS.

S. C. Black Leghorn eggs \$1, \$2, \$3, \$4, \$5 per 15. Black Leghorn facts free. Our birds have yellow legs, are enormous layers, steady layers, and winners wherever shown. If you want the best write Quimby & Brown, Box B, Ipswich, Mass. 1-09

ROCKS.

I offer for sale about 100 April hatched White Plymouth Rock pullets at 60 cents each in lots of five or more. Handsome, vigorous, stay-white birds from an extra heavy laying strain. Cockerels, same age, to mate with these at 75 cents each. Must have room or could hold these birds till fall for good prices. Also for sale 40 White Rock yearlings with average record of 167 each first year, at \$1.00 each in lots of five or more.
H. V. Fitzgerald, White Plume Ranch,
Dongan Hills, Staten Island, N. Y. 6

Thompson's Ringlets and Raymond's strain Barred Rock eggs 15 for \$1.25, 100 \$5. Mammoth Bronze turkey eggs, 25 cents each, from 18 lb. hens, 35 lb. tom. White Guinea eggs, 17 \$1.25.
Mrs. Eusebuis Barnard, Lenape, Pa. 6

Look here.—Barred Rock eggs \$3.50 per 100. Send stamp for circular telling more about them.
B. F. Brunbaker, Mount Joy, Pa. 6

White Plymouth Rocks. Direct from U. R. Fishel's best stock. They are heavy egg producers with the best trap nest records. Eggs from 92 to 94 point birds \$1.50 per 15, \$5 per 100. Day-old chicks from best stock, \$12 per 100. B. C. Thompson, 711 Kenyon St. Elmira, N. Y.

White Rock eggs for hatching (Fishel Strain.) Pen one, \$2.00, Pen two, \$1.50 per 15 eggs. Incubator eggs \$5.00 per hundred. Satisfaction guaranteed. Prize winners at leading shows.
H. P. Smith & Son, Woodhull, N. Y.

MINORCAS.

Pen S. C. Black Minorcas, worth \$50 for \$16. One \$5 Northrup hen in the lot. Eggs cheap.
Write J. E. Cole, Oak Grove, Del. 6

RHODE ISLAND REDS.

Single Comb Rhode Island Reds, DeGraff strain. 200 egg breeders. After March 1st, White Leghorn chicks 10c each. Wyckoff strain. We will give you a fair deal. Hill Crast Poultry Yards. S. Martin & Son, Props., Alba, Pa. 7

SEVERAL BREEDS.

Young Chicks.—Pullets and cockerels, six to eight weeks old. Pullets almost ready to lay. Cockerels nearly broiler size. Can furnish "Day Olds" and eggs if preferred; but why waste money and time when you can purchase stock practically grown, sure to live and thrive? Circulars free. Winfield-Beech Co., Salem, N. Y.

500 birds for sale.—Black Leghorns, bred from prize winners and noted layers. Houdan pullets from hens trap-nested to over 270 eggs a year. Thoroughbred birds at bottom prices, \$1.00 each.

Quimby & Brown, Box B, Ipswich, Mass.

One dollar buys fine Pekin Ducks, setting of Minorca or White and Buff Wyandottes, Best strains. Yearling hens, Cullies cheap. J. E. Cole, Oak Grove, Del. 8

Buff Rocks and Leghorns. In perfect health; active and good layers. Just hatched 14 chicks from 15 eggs. To get acquainted, 30 eggs for \$1.25.

Lauren Heasley, Dorr, Mich. 6

Rhode Island Reds and Barred Rocks. My birds are bred for utility and exhibition points. Eggs, \$1 per 13.
C. F. Maurer, Dublin, Pa. 9

PIGEONS.

For sale cheap. About 40 pure-bred Plymouth Rock Homer pigeons, prolific breeders; or will exchange for poultry. A. S. Eastwood, Porter, W. Va. 6

Pigeons—Mature, mated pairs, unexcelled breeders, ¾ Homer, ¼ Runt cross.
J. C. Wickham,
Schenevus, N. Y. 9

Plymouth Rock Homer Pigeons for squab breeding, best and most prolific. Guaranteed mated birds. Write for prices, W. K. Cumming, Winchester, Ky.

FARMS.

Poultry, Duck or Goose farm or hunting resort, 7 1-2 miles from Montpelier, Vt. Between forty and fifty acres. Five-room house, furnished, four stall barn with carriage room, abundant wood and pure water. Streams well stocked with trout; large and small game plentiful. Mous. tainous, healthful location. Price \$750 furnished or \$700 unfurnished.
A. Quackenbush,
Amsterdam, N. Y. 6

THERMOMETERS.

Best Quality Tested Incubator Thermometers. Price 50 cents each, postpaid. Address, Poultry Review, Elmira, N. Y.

Single Comb Brown Leghorns

Direct from the Howell Strain, the Acknowledged American Leaders.

Six entries at 1908 Elmira Show gave us three first, one second and two third premiums.

Selected Eggs at \$1.50 per 15.

Harry Mills, 510 Hart St., Elmira, N. Y.

SUNNYSIDE POULTRY FARM Breeder of all varieties

Brahmas, Cochins, Langshans, Leghorns, Polish, Minorcas, Hamburgs, Wyandottes, Javas, Anconas, Houdans, Spanish, Sherwoods, Rocks, Dominiques, Andalusians, Orpingtons, R. I. Reds, Ducks, Geese, Turkeys, Guineas and Pigeons.

F. I. Bradford, Box 9, Troy, Pa.

Poultry Judge, also Member of A. P. A., Elmira and Hornell Poultry Associations.

The Cycle Lampless Galvanized Brooder Made after The Philo System Plan and are practically indestructible.

This is the brooder used to raise our chickens out of doors during the coldest winter weather without artificial heat. They are lined with non-conducting material to help retain the heat, and are provided with an adjustable blanket and heavy wool stuffed quilt that will retain the heat of 25 to 40 chickens in zero weather. Shipping weight eight pounds.

One Brooder \$2.50

Five for \$11.25

Ten for \$20.00

Mr. J. T. Brown of Belle Center, Ohio writes the following: "I have four of your Philo System Brooders in use and find they will do just what you recommend them to do. I am sure I can place many of them and sell your book. Kindly let me hear from you regarding agents terms for Harden and Logan counties.

This is just a sample of hundreds of letters we are getting.

Cycle Hatcher Company

418 WILLIAM ST.,

ELMIRA, N. Y.



O. P. PILLING & SON CO.,

MAKE MONEY WITH CAPONS

Caponizing is easy and soon learned. Capons bring fancy prices and are always in demand.

PILLING CAPON TOOLS

complete with free instructions. Sent postpaid for \$2.50. Capon Book free. Write today.

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THE BANTY FOUNT SAVES LABOR



Send direct if not a dealer's. We refund money and pay freight both ways if not satisfied. You take no risk.

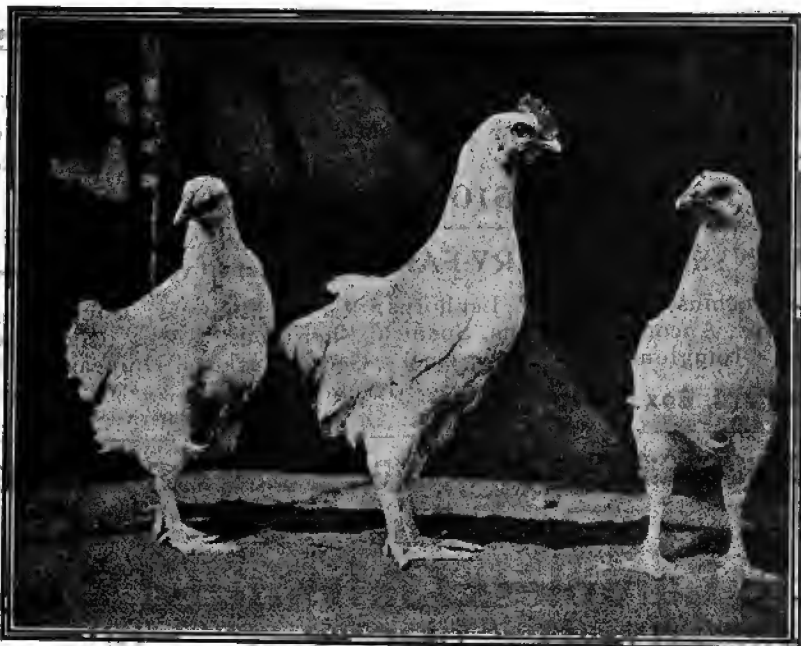
Galvanized iron made to last
 3/4 gal., 50¢, 1 gal., 75¢, 2 gal., \$1.00,
 Bismuth in dot. lots.
 Small sample mailed for 10 cts. stamp.



AM. PAT. SPECIALTY CO., Dayton, O.

EASILY FILLED & CLEANED

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Three Distinct Strains

S. C. White Orpingtons Raised by The
Philo System.

Utility White Orpingtons for Egg Production,
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Exhibition Strain for the Show Room.

Chicks from our eggs were raised out of doors in
January without artificial heat.

Extreme hardiness has been our aim in breeding this
stock five generations.

Ask for Catalog

Cycle Hatcher Co., 418 Wm. St., Elmira, N. Y.

POULTRY PRINTING.

Nicely printed and attractive stationery is the life of any business. When we get a letter from a poultryman on ordinary stationery without its being printed we are apt to think this particular breeder is lacking in enterprise and not of very much importance as a breeder, while in reality he might be a breeder of the front rank.

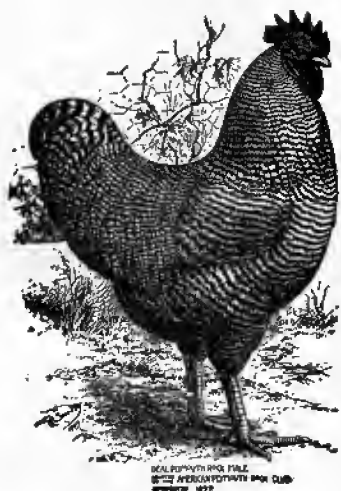
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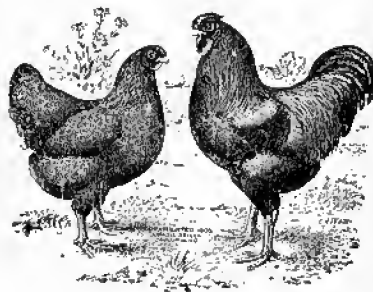
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Satisfaction guaranteed.



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The Poultry Review,
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Single Comb White Leghorns.

The Long, Rangy, Stay-White Kind

Are the acknowledged leaders wherever shown.

Our Twenty Years' Careful Breeding

On our farm has produced wonderful improvement over other strains.

Eggs for Hatching at Reasonable Prices by the Setting or on Large Orders.

H. V. Bump,

Cambridge, N. Y.

METAL MOTHERS.

OUR NEW DISCOVERIES MAKE

Poultry Keeping Easy and Profits Sure.



OUR 1908 PATTERN METAL MOTHERS

Are the perfected results of the latest discoveries in artificial incubation. They will hatch hens, ducks, turkey and goose eggs equally well and at the same time.

Regulation of Moisture and Heat entirely automatic.

One Metal Mother, complete, \$7.50, Two \$14; Four \$24.

One Hatcher, complete \$5.00; Two \$9; Four \$17; Six \$24.

CYCLE HATCHER CO., 418 William St., Elmira, N. Y.